

Patterns of coping preference among persons with schizophrenia: Associations with self-esteem, hope, symptoms and function

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Abstract

Maladaptive styles of coping are believed to be a barrier to recovery from schizophrenia. In this study we obtained measures of coping for 133 persons with schizophrenia or schizoaffective disorder. A cluster analysis was then performed based on those scores and produced five distinctive coping profiles. These five groups were then compared on concurrent assessments of hope, self-esteem, symptoms and social function. Multivariate and univariate ANOVA revealed that the group with a coping profile that involved a preference for both considering and acting had significantly greater levels of hope and self-esteem than groups with the other four coping profiles ($p < .05$). The group with a preference for resigning had lesser hope, self-esteem and more depressive symptoms than another other group ($p < .05$).

Keywords: coping, schizophrenia, hope, self-esteem,

Data from first person accounts (Frese, 1993) structured interviews (Mueser, et al., 1997) and formal assessments (Ritsner et al., 2006) suggest that many with schizophrenia spectrum disorders experience enduring difficulties coping effectually with daily and unexpected stress. They may struggle to solve problems (e.g. Corrigan and Toomey, 1995; Penn, et al, 1993), and tend, as a matter of style, to ignore stressors or abandon attempts to find alternative solutions to problems when their usual patterns of behavior fail (Farhall & Gehrke, 1997; Lysaker, Wilt, Plascek-Hallberg, Brenner, & Clements, 2003; Wilder-Willis, et al., 2002). In addition to having a tendency to employ specific forms of coping which may repeatedly fail, persons with schizophrenia appear to have a limited range of possible ways to respond when under stress. It is not simply, therefore, that persons with schizophrenia choose the “wrong” behavior when facing a challenge but that they may have a coping style which does not include enough possibilities beyond reacting and avoidance (Roe, Yanos & Lysaker, 2006).

Overall, ineffective coping is a matter of broad clinical concern. The inability to manage and respond to stress is believed to be among the primary causes of relapse and reduced quality of life in schizophrenia (Ritsner, et al, 2003; Ventura, et al, 1989). Research has suggested that more impoverished and avoidant styles of coping styles are linked to greater affective distress, greater levels of positive and negative symptoms, lesser hope and more frequent hospitalizations (e.g. Bak et al., 2001; 2003; Lysaker et al., 2005; 2001; Macdonald et al., 1998; Meyer, 2001; Modestin, et al., 2004; Middleboe and Mortensen, 1997; Ritsner & Ratner, 2006; Wiedl, 1992). Simply put, as persons fail to cope they feel increasingly overwhelmed and demoralized, which may lead to exacerbations in symptoms, which may then reinforce maladaptive coping style s in the manner of a vicious cycle.

To date, one limitation of the research on coping in schizophrenia is that it has tended to focus on either individual pieces of the coping process or on general patterns of active vs. passive or emotional focused approaches to stressors, rather than profiles of coping preference. In other words, beyond a broad understanding of the differences between functional and dysfunctional coping it remains unclear whether there are particular combinations of coping behaviors which are particularly adaptive as opposed to maladaptive for persons with schizophrenia. For instance, are there coping profiles which involve a preference for taking action in the absence of actively considering alternatives that contribute to psychosocial impairment? Are there certain patterns or combinations of avoidant coping more closely linked to dysfunction than others? Is having no coping preference linked more closely with health or dysfunction? Understanding how coping profiles are related to health could be of clinical importance and

point to possible means of both assessment and intervention for persons seeking recovery from schizophrenia.

To examine this issue we have previously suggested that an adaptive coping preference may be assessed among persons with schizophrenia. We defined a coping preference for an action orientation, which we labeled acting; and a coping preference for thinking or talking with others, which we labeled considering (Lysaker, et al., 2004). We have further suggested that a preference alone for acting or a preference alone for considering might be linked with dysfunction. Evidence supporting this includes a study with a small sample in which those identified as having preference for both acting and considering, as opposed to a preference for one or neither, was linked to better work performance in rehabilitation over time (Lysaker, et al., 2004).

In the current study we have sought to expand this research by determining if groups of persons with schizophrenia could be detected who varied according to their coping profile and whether those groups differed in the expected direction on objective measures of wellness and function. In particular, we were interested in whether we could detect five different groups of persons based on preferences for four types of coping: i) persons who had a preference for both acting and considering, ii) persons who had a preference for acting alone, iii) persons who had a preference for considering and resigning; iv) persons with a preference for ignoring and persons with v) no clear preference for any coping style. As an illustration of what behavior might be expected from someone with each of these coping profiles we offer the following hypothetical stressor: Wayne feels insulted by a supervisor at work who has criticized how he managed an interaction with an angry customer who subsequently filed a complaint asserting that Wayne is insensitive to the needs of mothers. If Wayne had the first coping profile he might think about the issues involved in the complaint, talk with others and plan a course of action. If Wayne had the second or third profile though, he might immediately take action without consideration of possible alternatives or tend to ruminate about what had happened and take no action. With the fourth profile Wayne might ignore the fact his supervisor criticized him and continue on as if nothing had happened. With the last profile, Wayne's response would be unpredictable as he might use any of the identified coping strategies. Clearly we would expect that the persons with the first coping profile would function more successfully while having any of the other four would be linked with greater dysfunction.

To explore whether there are distinct coping profiles linked with outcome we used the statistical procedure called cluster analyses to divide a sample of 133 persons with a schizophrenia spectrum disorder into five groups based on coping preferences. We have then labeled those groups according to their actual preferences using as a classification rule that having a 20% greater preference for a coping strategy relative to the average score for all coping behavior reflected a significant preference (e.g. if a group had a 20% greater preference alone for acting they would be labeled acting, if they had a 20% greater preference for both acting and ignoring they would be labeled acting and ignoring). Finally we have compared these groups on measures of self-esteem, hope and anxiety, symptoms, and interpersonal function.

We predicted that a group detected through cluster analyses which met criteria for a preference for both acting and considering would have higher self esteem, higher levels of hope, less anxiety, lower positive, negative and depressive symptoms and better interpersonal function than all other groups. We additionally planned two exploratory analyses. We first sought to compare groups on these same measures to determine whether there was an especially maladaptive pattern of coping. Is there a coping profile more closely linked to dysfunction than the others? We secondly planned to explore whether the Acting and Considering group had different patterns of scores on other tests relative specifically to the groups which had preferences for Acting but not Considering and for Considering but not Acting.

Methods

Participants

One hundred and sixteen men and 17 women with SCID (Spitzer, Williams, Gibbon, & First, 1994) confirmed DSM-IV diagnoses of schizophrenia ($n = 76$) or schizoaffective disorder ($n = 57$) were recruited from a comprehensive day hospital at a VA Medical Center ($n = 101$) and local Community Mental Health Center (CMHC; $n = 32$) for one of two larger studies: the prevalence of anxiety symptoms in schizophrenia ($n = 70$) or the effects of vocational rehabilitation ($n = 63$). All participants were receiving ongoing outpatient treatment and were in a post-acute or stable phase of their disorder, defined as no hospitalizations or changes in medication or housing in the last month. Participants with a history of mental retardation documented in a chart review were excluded. Participants had a mean age of 46.69 ($sd = 9.61$), a mean educational level of 12.76 ($sd = 1.99$) and a mean of 11.47 ($sd = 14.17$) lifetime hospitalizations with the first occurring on average at the age of 26.55 ($sd = 10.64$). Sixty participants were Caucasian, 70 African American, two Latino, and one Asian.

Instruments

The Positive and Negative Syndrome Scale (PANSS; Kay, Fiszbein, & Opler, 1987) is a 30-item rating scale completed by clinically trained research staff at the conclusion of chart review and a semi-structured interview. For the purposes of this study, three of the five PANSS factor analytically derived components (Bell, Lysaker, Beam-Goulet, Milstein, & Lindenmayer, 1994) were utilized: Positive Symptoms which includes symptoms such as hallucinations and delusions, Negative Symptoms which includes symptoms such as lack of affect and Emotional Discomfort which includes symptoms such as depressed mood and active social avoidance. Assessment of inter-rater reliability for raters in this study was found to be high to excellent with intraclass correlations for blind raters observing the same interview ranging from .84 to .93.

The Quality of Life Scale (QOLS; Heinrichs, Hanlon, & Carpenter, 1984) is a 21-item scale completed by clinically trained research staff following a semi-structured interview and chart review. For the purposes of this study, we were interested in two of the four factor scores of the QOLS that are most intimately tied to social function. The first, "Interpersonal Relations," measures the frequency of recent social contacts and includes separate assessments, for example, of frequency of contacts with friends and acquaintances. The second, "Intrapsychic Foundations," measures qualitative aspects of interpersonal relationships and includes assessments, for example, of empathy for others. High to excellent inter-rater reliability was found for the two QOLS factor scores for this study, with intraclass correlations for blind raters observing the same interview ranging from .85 to .93. Although originally created to assess negative symptoms in schizophrenia the QOLS has been widely used to study social function among persons with schizophrenia (Lysaker, Bell, Bryson, & Kaplan, 1998).

The Multidimensional Self-Esteem Inventory (MSEI; O'Brien & Epstein, 1998) is a 116-item self report measure which assess individuals' self-perception of their overall social value. Respondents rate items on a 5-point scale according to the degree or frequency with which each item applies to them. The MSEI offers t scores based on a community sample. T scores are normalized scores with a mean of 50 and a standard deviation of 10. The mean t score for this sample was 43.95 with a standard deviation of 10.92. This suggests participants reported levels of self esteem approximately .5 standard deviations lower than those of persons in a broad community sample. Because the MSEI has been largely used in samples of persons without psychosis, internal consistency was examined in this sample. Examination of items comprising the total score revealed a highly significant degree of internal consistency (coefficient $\alpha = .90$; $p < .001$). In this study we were primarily interested in the total score, however, there are, in addition to the total score, ten subscales. If we found an association between coping and the self esteem total score we also planned to examine three MSEI subscales that seemed likely to be intuitively linked to coping: Competence, Personal Power, and Self-Control. Competence assesses the degree to which a

person feels capable of learning and mastering tasks; Personal Power measures the extent to which a person feels influential and powerful in interactions with others; and Self-control is a measure of how self-disciplined and in control a person is in a variety of settings. We lastly employed a fourth subscale, Defensive Self Enhancement, to check for possible response bias. Defensive Self-Enhancement detects how defensive a person is and whether a person can acknowledge weaknesses or has an inflated view of self-worth.

The Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, & Trexler, 1974) is a 20-item questionnaire that asks participants to endorse statements as true or false as applied to them. Individual items are then summed to provide an overall index of hope or its absence. Examples of items include: "Things just won't work out the way I want them to" and "I might as well give up because I can't make things better for myself." This scale has been used successfully with a wide range of psychiatric, medical and community populations (Haatainen et al., 2003). In this study we reverse scored items so that higher scores would indicate higher levels of hope.

Multidimensional Anxiety Questionnaire (MAQ; Reynolds, 1999) is a 40 item self report questionnaire designed to tap multiple domains of the experience of anxiety. It offers an overall index of anxiety and four subscales: "Physiological-Panic," which assesses physiological symptoms of anxiety and the anticipation of panic; "Social Phobia" which assesses worries about social embarrassment and social avoidance; "Worries Fear" which assesses general experiences of worry and fearfulness in daily life; and "Negative Affectivity" which assesses general affective states related to anxiety such as irritability and general distress. T scores are provided for each subscale allowing for a judgment to be made regarding the severity of symptom level relative to a community sample. Reynolds (1999) presented evidence of acceptable internal consistency and test-retest reliability from both a general psychiatric and community sample and factorial validity from a combined psychiatric and community sample.

The Ways of Coping Questionnaire (WCQ; Folkman and Lazarus, 1988) is a self-report instrument that asks participants to recall a recent stressor and then rate how often they used 66 different behaviors to cope with that particular stressor. While this instrument has been established as a measure of coping in a community-residing well population, the factor structure of the scale, as with other scales, may not accurately reflect coping behaviors used by individuals with chronic psychiatric illness (Wineman, Durand, & McCulloch, 1994). In this study, we therefore utilized a rational scoring system we developed to be sensitive to coping deficits particular to severe mental illness using two different samples (Lysaker, Johannessen, Lancaster, Davis, Zito, & Bell, 2004). This scoring scheme yields six modes of coping scores. The first two are: "Considering," and "Acting." "Considering" refers to thinking or talking with others about what to do. "Acting" involves taking direct action to problem solve. The third, "Ignoring," refers to putting the stressor out of one's mind, or choosing to "not think" about it. The fourth, "Resigning" refers to a choice to not act because it is perceived that there is nothing to be done. The fifth mode of coping, "Positively Reappraising," reflects a tendency to see the "silver lining" in a stressor, or to recast negative stressors in a positive light. The sixth mode, "Self-soothing," reflects a primary concern for regaining emotional equilibrium. In one study that compared results derived from the original scoring system with our revised scoring scheme across two previous samples, the rationally devised scales were observed to have greater internal consistency than the original scales. Several of the original scale scores but none of the new scale scores failed to achieve acceptable internal consistency. Additionally, the revised scale scores were found to predict psychosocial function prospectively, whereas the original scale scores were unrelated to future behavior (Lysaker, et al, 2004). For this study we examined in our cluster analyses only the first four coping strategies as we anticipated that these would be most clearly linked to function.

In our analyses we used, as we have elsewhere (Lysaker, et al, 2004), relative scores. These are obtained for each scale by dividing the mean score for that scale by the mean score for the total test. This has the advantage of pointing to participants' relative preference and corrects somewhat for response bias.

Procedures

All procedures were approved by the research review committees of Indiana University and the Roudebush VA Medical Center. Following informed consent, diagnoses were determined using the Structured Clinical Interview for DSM-IV conducted by a clinical psychologist. Following the SCID, participants in both studies were administered the PANSS and QOLS interviews, MSEI, MAQ and BHS. A research assistant was available to assist participants if there were difficulties reading or understanding the questionnaires. PANSS and QOLS ratings were performed blind to responses to the MSEI, MAQ and BHS. QOLS and PANSS interviews were conducted by trained research assistants with a minimum of a B.A. degree in a field related to psychology. No interventions were performed in either study prior to obtaining the baseline information analyzed here. Of note, due to logistical difficulties QOLS interviews were not possible for 5 participants and therefore the total number of participants available for the analyses of differences in QOL were 128.

Analyses

Analyses were conducted in four steps. First a K mean cluster analyses was performed to identify five homogenous participant groups based on coping scores. Cluster analysis is a method of classifying people into typologies by determining clusters of participants that display small within-cluster variation relative to the between-cluster variation (Carpenter, Bartko, Carpenter, & Strauss, 1976; Dillon & Goldstein, 1984; SPSS, 1999). In cluster analysis, each participant is assigned to a cluster, and participants are moved from one cluster to another until terminating conditions are met. In essence, a cluster analysis is similar in some respects to both factor analysis and discriminant function analysis. It differs primarily from factor analysis in that its end is the determination of orthogonal groups of participants rather than orthogonal groups of variables, and it differs from a discriminant function analysis in that determining group assignment is the goal and not known ahead of time.

K mean cluster analyses are non-hierarchical forms of cluster analyses appropriate when hypotheses exist regarding the number of cluster contained in a sample. A K mean cluster analysis produces the number of clusters initially called for minimizing variability within clusters and maximizing variability between clusters. We chose this procedure rather than rationally defining groups in order to determine in an exploratory and statistical manner whether we could detect participants who demonstrated the hypothesized patterns of these scores. We determined not to rationally categorize participants as to artificially define groups might also not optimally minimize variability within groups and maximize variability between groups. To give the groups contextual meaning, we assigned labels to each group based on their coping preference using the procedures noted above: persons with a relative scores of 1.2 or greater for a coping preference were labeled as preferring that coping style. A group with scores fo 1.2 or greater for two coping styles were labeled as preferring both.

In the second phase of the analyses MANOVA and follow-up ANOVA were conducted comparing the PANSS total and the two QOLS scores. These were analyzed together as the PANSS and QOLS represent the measures obtained by objective raters. Follow-up ANOVA for the PANSS Positive, Negative and Emotional Discomfort components were planned with group comparisons using Fisher's LSD method if a significant group difference was found for the PANSS total. In the third phase of analyses, MANOVA and follow-up ANOVA were conducted comparing the BHS, MSEI and MAQ total scores. These were analyzed together as they represent the self-report measures obtained directly from participants.

Finally, if group differences were found for the MSEI and MAQ we planned in the fourth phase

of the analyses to conduct exploratory analyses of group differences in the four subscales of the MAQ, and four of the MSEI subscales. Of note, we did not assess all 10 subscales of MSEI in order not to avoid unduly raising the risk of spurious findings. We chose, as noted in the methods section, only subscales we intuitively reasoned might be most closely linked with coping and validity.

Results

Means and standard deviations of baseline scores are presented in Table 1 (See Appendix for tables). WCQ scores for Acting, Considering, Ignoring and Resigning were standardized into z-scores and K-Means cluster analysis was performed to identify five groups of homogenous participant groups based on the WCQ scores. The cluster analysis produced five groups which based upon WCQ relative scores were labeled: Acting only ($n = 27$), Considering only ($n = 24$), Acting and Considering ($n = 17$), No Preference ($n = 39$) and Resigning ($n = 26$). As revealed in Table 2, these groups did not differ significantly in age, education, or number of lifetime psychiatric hospitalization history. The No Preference group was significantly younger at age of first hospitalization than both the Acting and Considering group and the Resigning group. Chi square analyses additionally found the five groups did not differ in proportion of participants with schizoaffective disorder vs. schizophrenia, or in proportion of participants from the VA Medical Center as opposed to the CMHC. ANOVA also found no significant differences in coping scores for participants from the VA Medical Center as opposed to the CMHC.

Next, a MANOVA comparing groups on total symptoms and two QOLS subscales revealed a significant overall group effect (Wilks Lambda $F(3,12) = 1.94$, $p < .05$). As revealed in Table 3, follow-up ANOVA and multiple comparisons using Fisher's LSD revealed the Resigning group had higher PANSS total scores than every group except the Acting only group while the Acting and Considering group had lower PANSS total scores than every group except the Considering only group. Comparisons of the individual PANSS components revealed groups differed only on symptoms of Emotional Discomfort with the Acting and Considering group having fewer Emotional Discomfort symptoms than all other groups and the Resigning group having higher levels of Emotional Discomfort scores than any other group except for the Considering only group. On the QOLS, the Acting and Considering group had higher levels of Intrapsychic Foundations than the Resigning and No Preference group, while the Resigning also had lower levels of Intrapsychic foundations than the Acting only group. No differences were found on the Positive or Negative Component of the PANSS or on QOLS Interpersonal Relations scale.

A MANOVA examining group differences on the MSEI, MAQ and BHS total scores revealed a significant overall group effect (Wilks Lambda $F(3,12) = 4.43$, $p < .001$). As revealed in Table 4, follow-up ANOVA and multiple comparisons using Fisher's LSD revealed the Resigning group had lower self esteem and hope than any of the other five groups, while the Acting and Considering group had higher scores on these variables than any other group. With reference to anxiety, the Resigning group had higher scores on the MAQ than the Acting and Considering and Considering only groups, although their scores were higher than the remaining two groups at the trend level ($p < .07$).

Finally, a MANOVA examining group differences in the four subscales of the MAQ and four of the subscales of MSEI. As presented in table 5, there were no group differences in Defensive Self Enhancement. The Resigning group reported lower levels of Competence than any of the other four groups while the Acting and Considering group also had higher ratings of Competence than the Acting only and No Preference groups. The Resigning group had lower levels of Personal Power than the other groups except for the Considering only group while the Acting and Considering group also had higher scores on Personal Power than the Considering only group. The Resigning group reported lower levels of Self Control than any other group while the Acting and Considering group also had higher ratings than the No Preference group.

Concerning anxiety, the Resigning group had significantly higher levels of Social Phobia than all other groups and significantly higher levels of Negative Affectivity on the MAQ than all other groups except for the No Preference group. The Acting and Considering group also had lower levels of Negative Affectivity than the Acting only and No Preference group. No group differences were found between groups for the MAQ Worries and Fears and Physiological Arousal subscale scores.

Discussion

In the current study we explored the possibility that different coping profiles might be uniquely related to symptoms, social function, hope, self-esteem and anxiety. As predicted, a cluster analysis of persons with schizophrenia by coping preference revealed a group of persons with a preference for both Acting and Considering, for Acting alone and with no marked preferences for any coping style. A group with a preference for Considering alone was found, but they did not have a concurrent preference as expected for resignation. Unexpectedly we also found a group with a marked preference for Resignation and no group with a preference for Ignoring.

As predicted, the Acting and Considering group when compared to the other groups tended to have greater levels of function on both self report instruments and objective ratings. They had higher levels of hope, self-esteem and less emotional discomfort than all other groups. They had significantly more of the foundations necessary for interpersonal relationships than the No Preference or Resigning group. There was no evidence that the Acting and Considering group had lesser levels of positive symptoms, negative or general symptoms of anxiety. Importantly, there was no evidence that this or other groups tended to distort their responses in a manner to defensively enhance their self image.

While the cross sectional nature of this study precludes drawing conclusions regarding causality these results may suggest hypotheses for future research. For one, as a matter of intuition it seems possible that having a preference for both acting and considering leads to greater success at problem solving which in turn protects persons with schizophrenia from demoralization, depression, hopelessness and low self-esteem. Perhaps merely taking action or talking and thinking about problems alone are not sufficient for persons to navigate their way through the challenges which come with this illness. It is further possible that a mutual relationship also exists between these variables. In other words, as people cope adaptively they may feel better, and as they feel better, they may cope adaptively. Again given the cross sectional nature of this study, rival hypotheses cannot be ruled out, including the potential that variables not assessed here may account for the relationships observed in this study (i.e. deficits in neurocognition).

There were also two exploratory questions posed earlier. First we wondered if one coping style would appear to be less adaptive than others. Clearly one interpretation of the data is that the Resigning profile was far and above linked to the poorest levels of function. This group had significantly more symptoms of emotional discomfort, less hope and lower self esteem than all others groups. Analyses of the subscales of the self esteem and anxiety measures suggested that when compared to other groups the Resigning group had significantly higher levels of social phobia, negative affectivity, and lesser feelings of competence and self control. One possible speculation about these findings is that as persons begin to believe that they cannot actively respond to challenges in their lives, they feel increasingly poorly about themselves and feel unable to manage their emotions or social interactions. Perhaps again a feedback loop is created in which failure, poor self esteem, depression and anxiety reinforce one another. This is consistent with the suggestions of many that at the core of psychosocial dysfunction is an elaborate network of interrelated beliefs about the self as trapped with dysfunction (Bradshaw & Brekke, 1999; Hoffman, Kupper, & Kunz, 2000; Roe, 2001).

Regarding the differences between having a joint preference for Acting and Considering as opposed to preference for only one or the other, our analyses may pose some interesting questions for future research. Specifically the analyses of the subscales of the self esteem and anxiety measures suggested that when compared to a preference for both Acting and Considering, a preference for Considering alone was linked to a lesser sense of personal power while a preference for Acting alone was linked to a lesser sense of competence and more negative affectivity. One possible speculation about these findings is that persons who feel they are not able to influence others tend to think and talk about what they need to do but may be less inclined to act. Perhaps on the other hand, others act impulsively, without considering the possible results of those actions because while they hold hope of success they find talking with others about things unpleasant as they expect to be viewed as incompetent.

Of note, there were unexpected findings. The Considering only group did not have a preference for Resigning, and another group instead had a singular preference for Resigning while none had a preference for Ignoring. This may suggest that a preference for Considering alone is not linked with the expectation that there is nothing to be done. Resignation itself may also be more of an essential aspect of maladaptive coping in schizophrenia rather than ignoring or putting stressors out of one's mind. In other words, it may not be as much that persons with schizophrenia purposefully avoid acting or thinking about problems as they give up on the possibility that there is a solution. Additionally it was unexpected that there were no links between coping profile and frequency of interpersonal relationships or positive or negative symptoms. This may suggest that coping is more closely linked to a general style of how persons think about and react to daily events rather than being associated to manifestations of core symptoms of illness or the relative absence or presence of social networks. As with all observations regarding unanticipated results, these should be regarded as speculations and fodder for future study.

With replication, our findings may have several clinical implications. First, it may be useful to further develop interventions that increase person's awareness of their coping preference and enhance self efficacy (e.g. Lecomte et al., 1999). This may need to involve cognitive interventions which help persons become more aware of their habitual thoughts and behaviors and possibly challenge beliefs that might be linked to social phobia (Davis & Lysaker, 2005). Important to consider here is Warner's (1994) assertion that it is just as important for interventions to assist in developing a sense of mastery as it is to help enhance insight. It may be equally essential that persons must come to be both aware of their habitual thoughts and behaviors as well as learn to challenge the portrayal of self as helpless or destined to be rejected by others. This is consistent with a recent intensive case study which suggested that recovery may involve persons first evolving a greater sense of personal agency (Lysaker, et al., 2005) and a larger study that found hope was more closely tied to a sense of personal agency than an awareness of one's illness (Lysaker, Buck, Hammoud, Taylor, & Roe, 2006). Perhaps if dysfunctional beliefs about the future and personal value impact life in such an enduring manner, tailored interventions could be devised to help persons combat these self-stigmatizing beliefs. Future interventions and research could be directed to help persons with schizophrenia overcome their negative beliefs and find newer and more adaptive ways to think of themselves and their futures, thus allowing for adaptive responses to challenges which break a cycle of dysfunction.

Importantly, there are several limitations to the study. Generalization of findings is limited by sample composition. Participants were mostly men in their 40's, all of whom were involved in treatment. It may well be that a different relationship exists between insight stigma hope and self-esteem among younger persons with schizophrenia, in a predominantly female sample, or in particularly persons who decline treatment. Thus, more research is necessary which involves the collection of data at multiple time points with broader samples. We also did not assess the nature of stressful experiences with which persons were coping. More "fine-grained" assessments of coping including appraisals of the nature of stressors, are necessary to replicate and confirm the importance of the findings noted here.

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APPENDIX TO TABLES, NEXT PAGE!

Appendix to Tables

Table 1: Mean and standard deviations

Instrument	Score	Mean	Standard deviation
WCQ	Acting	1.00	0.30
WCQ	Considering	1.14	0.35
WCQ	Ignoring	0.87	0.30
WCQ	Resigning	1.02	0.36
PANSS	Total	72.13	15.10
PANSS	Positive component	15.76	5.05
PANSS	Negative component	18.48	5.42
PANSS	Emotional Discomfort component	12.85	4.42
QOLS	Interpersonal relations	19.50	7.51
QOLS	Intrapsychic foundations	22.41	4.94
BHS	Total	14.00	5.44
MSEI	Total	43.95	10.93
MSEI	Competence	32.16	6.31
MSEI	Personal Power	31.42	6.05
MSEI	Self Control	32.77	7.07
MSIE	Defensive Self Enhancement	49.79	8.50
MAQ	Total	81.26	22.01
MAQ	Physiological arousal	72.95	23.33
MAQ	Social Phobia	67.33	16.05
MAQ	Worries and Fears	77.44	21.21
MAQ	Negative Affectivity	60.74	11.60

Table 2: Background and Coping Scores among groups

	Group 1 Acting only (n=27)	Group 2 Considering only (n= 24)	Group 3 Acting and Considering (n= 17)	Group 4 No Preference (n= 39)	Group 5 Resigning only (n= 26)	ANOVA F=	Group Comparisons p<0.05
Age	46.48 (8.84)	45.29 (9.64)	48.18 (8.49)	46.44 (11.68)	47.62 (7.95)	0.29	n/a
Education	12.67 (2.29)	13.50 (2.55)	12.88 (1.62)	12.82 (1.45)	12.00 (1.83)	1.88	n/a
Lifetime Hospitalization	9.04 (7.00)	11.67 (12.85)	10.41 (20.34)	11.49 (12.82)	14.50 (18.04)	0.51	n/a
First Hospitalization	25.92 (8.18)	24.68 (11.77)	30.27 (6.70)	23.44 (8.45)	30.88 (14.37)	2.62*	4< 3,5
PANSS Total	72.15 (13.55)	71.50 (15.22)	62.94 (14.28)	71.38 (14.86)	79.81 (14.61)	3.54*	3<1,4,5 5>2,3,4
WCQ Acting	1.21 (0.16)	0.85 (0.20)	1.33 (0.45)	1.01 (0.18)	0.69 (0.24)	31.91**	1,3> 2,4,5 5< 1,2,3,4
WCQ Considering	0.95 (0.26)	1.45 (0.38)	1.46 (0.29)	1.04 (0.21)	0.96 (0.28)	19.38**	4>3 2,3> 1,4,5
WCQ Ignoring	0.68 (0.15)	0.66 (0.19)	0.65 (0.19)	1.05 (0.19)	1.13 (0.31)	33.52**	4,5>1,2,3
WCQ Resigning	1.12 (0.30)	1.00 (0.21)	0.57 (0.25)	0.88 (0.16)	1.45 (0.30)	39.20**	5>1,2,4,3 3<1,2,4,5 4<1

* p< .01; ** p< .001

Table 3: Ratings of Symptoms and Social Function among groups

	Group 1 Acting only (n=27)	Group 2 Considering only (n= 24)	Group 3 Acting and Considering (n= 17)	Group 4 No Preference (n= 39)	Group 5 Resigning only (n= 26)	ANOVA F=	Group Comparisons p<0.05
PANSS Total	72.15 (13.55)	71.50 (15.22)	62.94 (14.28)	71.38 (14.86)	79.81 (14.61)	3.54*	3<1,4,5 5>2,3,4
PANNS: Positive	16.81 (4.92)	14.96 (5.03)	13.65 (5.40)	15.28 (4.58)	17.50 (5.25)	2.12	n/a
PANNS: Negative	18.26 (4.93)	18.13 (5.38)	17.18 (5.18)	17.90 (5.89)	20.77 (5.12)	1.58	n/a
PANNS: Emotional Discomfort	12.67 (3.22)	13.75 (5.18)	9.53 (4.06)	12.31 (3.83)	15.19 (4.52)	5.22**	5>1,3,4 3<1,2,4,5
QOLS ¹ Interpersonal Relatedness	19.85 (6.78)	21.52 (7.39)	21.29 (8.80)	18.14 (7.42)	18.08 (7.43)	1.21	n/a
QOLS Intrapsychic Foundations	23.23 (5.29)	23.48 (4.71)	24.88 (5.46)	21.38 (3.94)	20.40 (4.92)	3.16*	3>4,5 5<1,2,3

* p< .05, ** p< .01

¹ For Quality of Life scales, there were less participants for the following: n=26 for group 1, n=23 for group 2, n = 17 for group 3, n=37 for group 4, and n=25 for group 5.

Table 4: Self-report of Hope, Anxiety and Self-esteem among groups

	Group 1 Acting only (n=27)	Group 2 Consideri ng only (n= 24)	Group 3 Acting and Considering (n= 17)	Group 4 No Preference (n= 39)	Group 5 Resigning only (n= 26)	ANOVA F=	Group Comparisons p< .05
Beck Hopelessness Scale Total	15.44 (3.77)	14.87 (4.27)	18.47 (1.81)	13.62 (5.15)	9.35 (6.57)	10.75****	3> 1,2, 4,5 5< 1,2,3,4
MAQ Anxiety Total	81.81 (19.55)	78.67 (24.51)	70.94 (21.29)	79.85 (19.97)	92.68 (22.94)	2.95*	5> 2,3
MSEI Self- esteem Total T-score	45.89 (8.79)	42.46 (7.68)	52.47 (9.57)	45.82 (12.30)	34.92 (7.83)	9.63****	3> 1,2,4,5 5< 1,2,3,4

* p< .05, ** p< .01, *** p< .001

Table 5: Self-esteem and Anxiety subscale scores among groups

	Group 1 Act Only (n=27)	Group 2 Consider Only (n= 24)	Group 3 Acting and Considering (n= 17)	Group 4 No Preference (n= 39)	Group 5 Resigning only (n= 26)	ANOVA F=	Group Comparisons p< .05
MSEI Competence	43.19 (10.13)	44.08 (9.44)	50.99 (8.55)	42.31 (11.46)	36.08 (8.52)	5.30*	5< 1,2,3,4 3> 1,4,5
MSEI Personal Power	46.33 (9.07)	44.21 (8.92)	50.65 (11.30)	46.67 (10.33)	39.46 (9.26)	3.94*	5< 1,3,4 3> 2,5
MSEI Self- Control	51.89 (11.99)	48.21 (11.53)	54.59 (9.28)	47.21 (13.04)	36.77 (11.92)	7.70**	5< 1,2,3,4 3> 4,5
MSEI Defensive Enhancement	59.70 (9.89)	57.42 (8.74)	60.65 (10.62)	58.62 (11.99)	53.35 (11.47)	1.68	n/a
MAQ Physiological Arousal	72.37 (25.14)	71.08 (20.04)	64.35 (25.99)	73.13 (20.27)	80.62 (25.97)	1.34	n/a
MAQ Social Phobia	66.74 (14.59)	66.79 (13.18)	58.59 (10.49)	65.64 (16.81)	76.69 (18.20)	3.91*	5> 1,2,3,4
MAQ Worries and Fears	76.78 (19.29)	76.67 (21.40)	68.53 (22.49)	77.54 (19.91)	84.54 (23.12)	1.52	n/a
MAQ Negative Affectivity	60.07 (8.88)	58.53 (10.45)	53.18 (13.50)	61.92 (11.21)	66.38 (11.90)	3.96*	5> 1,3,4 3< 1,4,5

* p< .01, ** p< .001

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